CLAIM AMENDMENTS

Claim Amendment Summary

Claims pending

- Before this Amendment: Claims 11, 18-20, and 23-29.
- After this Amendment: Claims 11, 18, 24, and 26-29

Non-Elected, Canceled, or Withdrawn claims: 1-10, 12-17, 19-23, 25, and 30-31

Amended claims: 11, 18, and 24

New claims: none

Claims:

1-10. (CANCELED)

11. **(CURRENTLY AMENDED)** A computerized system comprising:

a processor;

a memory;

a directed labeled graph having node and links, wherein nodes are assigned a type, and each node represents either an entity or a relation, but links only represent relations;

an annotated schema runtime (ASR) engine operably coupled to the directed labeled graph; and

an apparatus having at least one variable bound to a node or link in the directed labeled graph operably coupled to the ~~annotated schema runtime~~ ASR engine, wherein the apparatus ~~has at least one variable bound to a node or link in the directed labeled graph~~ comprises:

an annotated schema runtime interface (IASR), wherein an IASR application program interface (API) is implemented by the ASR engine and configured as a software module to interface with the ASR engine and to handle requests from a client for a spider cursor function, wherein the spider cursor function enables the client to navigate within the ASR engine to retrieve elements from the graph; and

an annotated schema runtime cursor interface (IASRCursor) wherein an IASRCursor API is implemented by one or more annotated schema runtime cursor objects and configured as a software module to interface with an ASR engine and to handle requests from a client for a spider cursor function, wherein the spider cursor function enables the client to navigate within the ASR engine to retrieve elements from the graph.

12-17. (CANCELED)

18. (CURRENTLY AMENDED) A computer-readable medium having ~~stored~~embodied thereon a data structure executable by a processor comprising:

a graph having a plurality of nodes and links, wherein the graph further comprises a linked list and wherein each of the plurality of nodes is assigned a type, and each node represents either an entity or a relation, but each link only represents a relation; and

at least one variable bound to one of the plurality of nodes and links, wherein a bound variable is bound using a restriction and further comprises a spider cursor which facilitates navigating or querying the graph including non-apparent relations, and wherein

the data structure ~~is capable of~~facilitates having at least two variables bound to one of the plurality of nodes and links.

19-23. (CANCELED)

24. (CURRENTLY AMENDED) ~~An~~ spider ~~annotated schema runtime interface (IASR) cursor~~ application program interface (API) configured as a software module embodied on computer-readable media and executable by a processor to perform acts comprising:

facilitating client communication by invoking an annotated schema runtime engine;

interfacing with an annotated schema runtime interface (IASR);

interfacing with an annotated schema runtime cursor interface (IASRCursor);

~~to interface with an annotated schema runtime engine; and~~

~~to create~~ creating a new node in a graph from information comprising a variable and a constraint; and

storing new nodes and links.

25. (CANCELED)

26. **(ORIGINAL)** The IASR cursor application program interface as in claim 24 further comprising an IASR cursor application program interface for finding the first node or link in the graph in reference to the constraint from information comprising a variable specifying the first node or link in the graph, with respect to the current sort order.

27. **(ORIGINAL)** The IASR cursor application program interface as in claim 24 further comprising an IASR cursor application program interface for finding the last node or link in the graph in reference to the constraint from information comprising a variable specifying the last node or link in the graph, with respect to the current sort order.

281. **(ORIGINAL)** The IASR cursor application program interface as in claim 24 further comprising an IASR cursor application program interface for finding the next node or link in the graph in reference to the constraint from information comprising a variable specifying the next node or link in the graph, with respect to the current sort order.

29. **(ORIGINAL)** The IASR cursor application program interface as in claim 24 further comprising an IASR cursor application program interface for finding the previous node or link in the graph in reference to the constraint from information comprising a variable specifying the previous node or link in the graph, with respect to the current sort order.

30-31. **(CANCELED)**